HORTICULTURE NOTE NO. 31

DELAYED WEEDING REDUCES AIBIKA YIELD

JOHN W. SOWEI and PAUL OSILIS.
Department of Agriculture and Livestock, Laloki Agricultural Research Station, P. O. Box 417, KONEDOBU, N.C.D., Papua New Guinea.

ABSTRACT

*Aibika (*Abelmoschus manihot*) is an important leafy vegetable in Papua New Guinea. Cultivation practices vary between regions. Weeds are aggressive competitors of all cultivated crops. Therefore a number of trials were conducted at Laloki Agricultural Research Station to determine the effect of delayed weeding on the yield of three varieties of aibika. Delayed weeding was found to reduce yield and delays time to harvest. The critical weeding period is between two to three weeks after planting.*

INTRODUCTION

Aibika (*Abelmoschus manihot*) is by far the most important leaf vegetable in Papua New Guinea (PNG). Aibika is common in the lowlands and is grown in the highlands at up to 2100 m altitude.

Traditionally aibika is intercropped in a mixed garden. In a mixed cropping system weeds can affect initial crop establishment. In some areas such as the Sepik and Madang Provinces, aibika is usually planted after staking the main crop of yam (*Dioscorea esculenta* and *D. alata*). Under monoculture (aibika only) weed control is necessary for good establishment and yield.

For this reason, two trials were conducted at Laloki Agricultural Research Station to establish the critical weeding period or how soon after planting should weeding commence. At what stage do weeds reduce plant growth and subsequent yield? This horticulture note presents the results and recommendations from these trials.

METHODS OF INVESTIGATION

The trials were conducted during the wet season with supplement sprinkler irrigation. Cuttings from three varieties, L9, L16 and L19 were used in both trials. Six weeding treatments were used for the first trial; at 2 , 3, 4, 5 and 6 weeks after plating. A standard (non weeded) plot was included. In the second trial, weeding treatments were done at weekly and fortnightly intervals at 2, 3 and 4 weeks after planting. Weeding was done manually using garden hoes.

RESULTS

In the first trial the lowest yields were recorded from the no-weeding treatment (see Table 1). On the other hand the best yields were obtained for weeding treatment at 2 weeks after planting. Thereafter the yields declined with delayed treatment.

The second trial was designed to test weekly and fortnightly weeding at 2, 3 and 4 weeks after planting. Delayed weeding after 3

Table 1. Effect of delayed weeding on Aibika yield (first trail).

	yield (t/ha)		
weeding treatment	L9	L16	L19
2 WAP	4.47	8.05	3.90
3 WAP	5.03	6.32	2.97
4 WAP	3.37	4.42	3.42
5 WAP	3.22	4.65	2.82
6 WAP	1.85	1.27	1.93
No weeding	0.52	0.93	0.33

weeks was also found to reduce yield when first harvested at 79 days (see Table 2). However, there were no differences for the second harvest at 4 weeks from the first harvest. This is an indication that after three months, the crop had established good canopy to suppress weeds, therefore sustain tip production.

CONCLUSIONS

1) The critical period for weeding aibika is at 2 to 3 weeks after planting.

(2) Weeding at weekly intervals from 2 weeks after planting gives a little higher yield than fortnightly weeding for the first harvest only.

Table 2. Effect of delayed weeding on Aibika yield (second trail)

		yield (t/ha)		
weeding treatment		L9	L16	L19
weekly	2WAP	5.05	4.75	2.07
	3WAP	5.05	4.57	1.60
	4WAP	4.32	3.52	1.40
fortnightly	2WAP	4.13	4.08	2.05
	3WAP	4.68	2.52	2.27
	4WAP	3.08	2.92	0.75

(3) Delayed weeding reduces crop establishment and delays time to harvest.

ACKNOWLEDGMENTS

The first author would like to thank his family, Elizabeth and Stefan for their love and support during the time this horticulture note was written whilst he was on study leave at the University of Queensland, Gatton Campus.